NORTH CAROLINA DIVISION OF AIR QUALITY

Application Review

Issue Date: INSERT DATE

Region: Mooresville Regional Office
County: Catawba
NC Facility ID: 1800419
Inspector's Name: Bob Caudle
Date of Last Inspection: 12/01/2017
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): Prysmian Cables and Systems USA, LLC

Facility Address:
Prysmian Cables and Systems USA, LLC
2512 Penny Road
Claremont, NC 28610

SIC: 3229 / Pressed and Blown Glass, Nec
NAICS: 327212 / Other Pressed and Blown Glass and Glassware Manufacturing

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP: 15A NCAC 02D .0515, .0521, .0524, .0614, .1100, .1111
NSPS: 40 CFR 60 Subpart IIII
NESHAP: 40 CFR 63 Subpart DDDD and DDDDD
PSD:
PSD Avoidance:
NC Toxics: 15A NCAC 02D .1100
112(r):
Other: Remove 15A NCAC 02Q .0317 MACT Avoidance

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Rick Miller Environmental Safety Manager (828) 459-8668 2512 Penny Road Claremont, NC 28610	Steve Linden Plant Manager (828) 459-9787 2512 Penny Road Claremont, NC 28610+0039	Glenn Peterson Fiber Plant Director (828) 459-8668 2512 Penny Road Claremont, NC 28610

Application Data

Application Number: 1800419.18A and .18B
Date Received: 03/21/2018 and 05/08/18
Application Type: Modification
Application Schedule: TV-Minor and Significant

Existing Permit Data
Existing Permit Number: 07334/T27
Existing Permit Issue Date: 07/27/2015
Existing Permit Expiration Date: 02/28/2019

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2016	0.5200	207.33	25.31	1.49	7.47	2.23	0.7502 [Chlorine]
2015	0.4400	191.32	25.42	1.37	5.32	7.54	5.07 [Fluorides (sum of all fluoride]
2014	0.4300	145.05	21.79	0.8600	4.96	5.33	4.61 [Fluorides (sum of all fluoride]
2013	0.4300	144.30	16.84	1.10	5.19	5.54	5.52 [Hydrogen fluoride (hydrofluori]
2012	5.18	151.70	22.48	0.8900	8.84	0.1433	0.1233 [Hydrogen fluoride (hydrofluori]

Review Engineer: David Hughes
Review Engineer's Signature: **Date:** INSERT DATE

Comments / Recommendations:
Issue 07334/T28
Permit Issue Date: INSERT DATE
Permit Expiration Date: February 28, 2019

I. Purpose of Application

Combined Applications

As a final action, Application 1800419.18A for a Minor Modification and Application 1800419.18B for a Significant Modification of the Title V Air Permit were combined.

Application 1800419.18A for a Minor Modification
This permitting action is for a minor modification of an existing Title V permit pursuant to 15A NCAC 2Q .0515. The permit application was deemed complete and a permit application acknowledgement letter was issued on **March 26, 2018**. Since the application was complete the applicant was allowed to implement the proposed changes before the actual permit was revised and issued.

The minor application, in accordance with 15A NCAC 2Q .0515, meets the criteria outlined below.

A permit modification issued in accordance with 15A NCAC 2Q .0515 minor permit modifications allows a Title V facility to make modifications at the facility when the modifications:

(1) do not violate any applicable regulation;
(2) do not involve significant changes to existing monitoring, reporting, or recordkeeping (MRR) requirements in the permit;
(3) do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
(4) do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the facility has assumed to avoid an applicable requirement to which the facility would otherwise be subject. Such terms and conditions include:
(A) a federally enforceable emissions cap assumed to avoid an applicable requirement under any provision of Title 1 of the federal Clean Air Act; or
(B) an alternative emissions limit approved as part of an early reduction plan submitted pursuant to Section 112(i)(5) of the federal Clean Air Act;
(5) are not modifications under any provision of Title I of the federal Clean Air Act; and
(6) are not required to be processed as a significant modification under Rule .0516 of this Section.

Installation of New Sources as Insignificant Activities

Prysmian is requesting to install the following insignificant sources:

- One NG fired Hot Water Boiler (I-WB-3) – 8.0 MMBtu per hour (MACT)
- One NG fired Steam Boiler (I-SB) – 2.10 MMBtu per hour (MACT)
- Two NG fired Munters (I-M) – 2.4 MMBtu per hour each
- One 1800 acfm Vacuum System (IES-13b);
- Ten Collapse Process Hoods (IES-15)
- Seven CVD Prep Hoods (IES-5)
- Twenty-four Draw Towers (IES-7)
- IES-Draw Clean is made up of multiple cleaning stations. It was discovered in the CY 2016 emissions inventory that these units are not included on the current permit.

Clarifications Insignificant Activities

- Fluid bed washer (I-FBW); was changed to Fluidized bed washer as per latest inspection report.
- Two natural gas fired storage tank heaters (I-T-1, I-T-2; 0.129 million Btu/hour, each) were removed as per latest inspection report.

This engineer concurs with the proposed additional sources as documented in the minor modification application to be included on the insignificant activities list attached to the Title V permit as emissions from each source is less than 5 tons per year (TPY) of a criteria pollutant and 1,000 pounds per of HAPs [02Q .0503(8)].

Installation of New Sources

- Add new Etching operations (ES-Etch) equipped with a scrubber (4WS). The operations will include four 1,000-liter tanks; two for 49% HF and two for 60% nitric acid.
- Two new 1500 kW diesel fired Emergency Generators (IES-EmGen2 and 3) *.
- Add new Chemical Vapor Deposition (CVD) process hoods to existing source (ID No. ES-1). In the 2014 application, Prysmian requested to add additional chemical vapor deposition (CVD) lathes. In this application, Prysmian requested to add more CVD lathes controlled by existing scrubber 3WS. Dana Norvell and Dale Overcash of Trinity Consultants met with William Willets and Mark Cuilla of DAQ on **December 5, 2017**. During the meeting Trinity presented data that the addition of the CVD lathes would not be subject to any current Part 63 NESHAP and would not be subject to the CAA Section 112(g) requirements as each lathe is a process and production unit that has a chlorine (worst-case HAP) potential to emit (PTE) of 0.66 TPY and thus does not conform to the construction and reconstruction requirement within 112(g). With the ability to build and operate more CVD lathes the PTE would be 19.7 TPY.
- Remove the CVD process hoods (ES-2) as they are no longer operating.
- Revise the state-enforceable air toxics limitations as per the latest modeling demonstration for the new source ES-Etch and the CVD lathes.

* Note the MACT affected IES-EmGen2 and 3 appear on the insignificant activities list as per NC-DAQ Permitting Section latest SOP.

Application 1800419.18B for a Significant Modification in accordance with the criteria outlined 15A NCAC 2Q .0516

Prysmian is requesting to add the following significant emission sources and changes to the permit:

- Change the Responsible Official from Steve Linden, who signed the required Compliance Certification Form E-5, to Glenn Peterson, Plant Manager. Update IBEAM.
- Address the applicability of MACT DDDDD to the existing boilers included in the insignificant activities list*.
- Remove the synthetic minor MACT avoidance condition.
- Remove HF as a pollutant subject to the CAM conditions and remove this condition since there are no SIP regulations with the removal of the HAP avoidance limit that will apply to sources of HF at the facility. Only the state enforceable air toxics limitations will continue to apply.

* Note the MACT affected existing boilers appear on the insignificant activities list as per NCDAQ's Permitting Section latest SOP.

This engineer concurs with the finding that 112(g) would not apply. Furthermore, 112(g) would not apply to any of the above proposed new sources of HAPs, including new Etching operations (ES-Etch) equipped with a new scrubber (4WS) as the before and after control PTE is less than the major source thresholds. Also, in conformance with the latest DAQ Permitting Section's SOPs, previously requiring these sources to be included in the body of the permit, the two new emergency engines (Subpart ZZZZ) and existing boilers (Subpart DDDDD) now appear only in the insignificant activities list since emissions are less than 5 TPY.

Updates to Previously Submitted Information
Prysmian submitted a minor modification permit application in **December 2014** to restart permitted equipment in ES-1, ES-4-3WS, ES-14 and SiCl4 Storage Room all controlled by existing scrubber 3WS. This equipment, along with ES-11 and ES-18 vent to wet scrubber 3WS. As a part of the 2014 application, Prysmian requested to increase the total chemical vapor deposition (CVD) lathes. Because of these changes, Air Permit T27 required Prysmian to test 3WS within 180 days of startup to verify emissions.

As required, Prysmian tested the wet scrubber 3WS on **February 14, 2017** for filterable particulate matter (PM10), hydrogen chloride (HCl), hydrogen fluoride (HF) and chlorine (Cl) emissions. In addition, the lime injection system (2DS) associated with Over-cladding units (ES-9a) was tested for NOx as this is an annual requirement of the permit for complying with the existing (one of two) 250 TPY NOx PSD avoidance limits. The tested emission rates were higher than projected for chlorine and hydrogen fluoride and less than projected for hydrogen chloride. Even so, compliance with the particulate standard (02D .0515) and state enforceable toxic air pollutants permit limits (02D .1100) was demonstrated. In addition, a revised emissions factor for NOx was established. Also, process parameters (liquid flowrate, pH and delta P) were in compliance with the permit limits as found in the avoidance condition. (See the **November 28, 2017** memorandum from SSCB).

Prysmian also requested the specific conditions 2.1.1.a.v and viii concerning the "block valve" be removed; the block valve was used to prevent the scrubber from being overloaded. This is no longer an issue with the current operations.

In addition, Prysmian requested an additional Responsible Official (RO), Mr. Tracy Overcash. Thus, Mr. Glen Peterson and Mr. Tracy Overcash are dual ROs replacing Mr. Steve Linden.

Removal of HAP Avoidance Limit
Prysmian has an enforceable facility-wide emissions limit in the current permit to remain a minor source of hazardous air pollutants (HAPs). Along with the other proposed changes described above, Prysmian is requesting the addition of more CVD lathes. Prysmian was managing the operation of these lathes to remain a minor source of HAP. Under this application, Prysmian is requesting the removal of this condition and to become a major source of HAPs with no restrictions. As such the facility is reclassified as a HAP major source because of the proposed operation of the additional CVD lathes.

This engineer concurs with the removal of the HAP avoidance conditions and limitations.

Removal of and/or changes to CAM Conditions

The following comments were received from Prysmian in response to requests for additional information for clarification of the existing CAM conditions.

For the control device 3WS the following changes were proposed:

- Current permit has CAM for SO2 and HF. SO2 from 3WS is an error. None of the sources that exhaust to 3WS emit SO_2.
- HF, HCl and CL_2 have uncontrolled emissions > 10 TPY so Prysmian requested, in the Minor Modification, to add these to CAM. However, in the Significant Modification Prysmian requested the removal of the HAP avoidance limit. Since there is no longer an applicable DAQ SIP rule, CAM is not applicable and can be removed from the updated permit.

The CAM stipulation currently in the permit is for emissions of HF and SO2. This engineer concurs that the sources ES-1 controlled by 3WS do not have SO2 emissions. Therefore, SO2 could be removed from the stipulation. The proposed modification allows additional CVD lathes. With the removal of the HAP avoidance stipulation the increase in emissions of HAPs was considered. Uncontrolled emissions of

HAPs are greater than the major source threshold of 10 TPY. Though this would indicate CAM would apply; there are no SIP regulations that apply to the HAPs therefore CAM does not apply.

Furthermore, the emissions of PM were considered. The proposed changes allow additional CVD lathes. Based on the emissions testing for two lathes the ACE PTE is projected to be 0.42 lb/hr or 1.84 TPY. Applying the control efficiency of 3WS of 95% the BCE PTE is projected to be 8.4 lb/hr or 36.8 TPY. Though there are SIP regulations that apply, this combined source would be considered a small PSEU. CAM does not apply to the sources ES-1 controlled by 3WS and, therefore, the CAM condition was removed from the permit.

For the control devices 1DS and 2DS the following changes were proposed:

- Current permit has CAM for PM and HF. Pre-controlled PM emissions are above 100 TPY and are subject to 15A NCAC 2D .0515 so the CAM condition should remain for PM.
- Requested the removal of HF in the updated draft since there is no longer an applicable DAQ rule.
- For NOx, Prysmian indicated CAM would apply if the units operated the optional, idle SCR's (so currently there is no control device for NOx). Prysmian thought there use to be a condition that the facility would submit a CAM plan if they started up, but it appears to have been removed at some point. There are no current plans to operate the SCRs.

The other two CAM stipulations currently in the permit are for PM and HF. This engineer concurs that the sources ES-9 and ES-9a controlled by 1DS or 1SCR and 2DS or 2SCR are subject to SIP regulations and PM should remain in these conditions. With the removal of the HAP avoidance stipulation there are no SIP regulations that apply to the HAPs therefore CAM does not apply. As such, HF was removed from the stipulation.

There should not be requirements for a CAM plan, if Prysmian started up an ammonia injected catalytic NOx reduction system. CAM is not required since these sources are subject to PSD avoidance stipulations for NOx. As such, these control devices are exempt from CAM as per §64.2 Applicability, specifically; (b) Exemptions; where Prysmian is subject to; (v) An emissions cap that meets the requirements specified in § 70.4(b)(12)(ii) of this chapter.

II. Facility Description

Prysmian Cable and Systems USA, LLC, manufactures optical fibers and optical cables at a facility in Claremont, Catawba County, NC. The facility is operating under the existing air permit 07334T26. This permit was issued on **March 27, 2014** and is currently scheduled to expire on **February 28, 2019**.

III. History/Background/Application Chronology

November 28, 2017	Memo issued to Mr. Bruce Ingle of the MRO from Ms. Shannon Vogel of the SSCB. The EPA Methods and test results were found to be acceptable. February 14, 2017 testing was for PM, HCl, HF, Cl, and NOx. Compliance with permit emissions limits and parametric monitoring were demonstrated.
February 2, 2018	Stack testing protocol letter issued to Mr. Rick Miller of Prysmian indicating the proposed protocol for NOx testing was approved by Ms. Shannon Vogel of the NCDAQ's SSCB.
March 21, 2018	Application for a minor modification of the air permit was received. The Application Number was 1800418.18A.
March 26, 2018	Minor modification approval letter (10-day letter) issued to Mr. Steve Linden, Plant Manager from this engineer indicating the minor modification was complete and giving conditional approval of the proposed changes.

	The letter allows the applicant to proceed with changes proposed in the application before the permit is revised.
April 3, 2018	Stack test observation report issued by Mr. Bob Caudle of the Mooresville Regional Office (MRO). Purpose of the test was to reevaluate the uncontrolled NOx emissions from the Overcladding unit (ES-9) used in demonstrating compliance with the PSD avoidance limit. Annual testing is required by the permit. Stack testing appeared to follow the test methods.
April 10, 2018	Memorandum for review of the dispersion modeling was issued by Mr. Mathew Porter of the AQAB to Mr. Charles Yirka of the RCO. Mr. Porter indicated the dispersion modeling analysis adequately demonstrated compliance with the AALs in 02D .1104.
May 9, 2018	Application for significant modification was received for the removal of the HAPs avoidance condition and other changes in the permit.
October 2, 2018	Pre-draft permit was submitted to the applicant for comment.
October 4, 2018	Comments received from applicant on pre-draft. Replace Steve Linden with Glenn Peterson new Plant Manager and RO.
October 10, 2018	Request for additional information for description scrubber 3WS.
October 29, 2018	Description for 3WS received.
November 6, 2018	Additional information received regarding SO2 in existing CAM stipulation. Request for additional information regarding existing and new CAM stipulations.
November 9, 2018	Request for additional information regarding existing CAM stipulations. Additional information received regarding existing and new CAM stipulations.
November 15, 2018	Request for additional information regarding PM emissions increase from this modification. Additional information received regarding PM emissions increase from this modification.
November 19 ,2018	Draft permit and review submitted to supervisor for review and comments.
November 26, 2018	Email to supervisor Mr. Cuilla from me indicating Prysmian declined offer to combine the open applications 18A, .18B with renewal .18C.
December 19, 2018	Draft permit sent for comment to Dana Norvell of Trinity.
January 7, 2019	Request for additional information Form A1s for three open applications. .18A, .18B, and .18C. Comments received on draft permit and additional comment on draft permit and review received for scrubber 3WS. Signed letter for dual ROs received.
January 9, 2019	Received signed Form A1's for additional RO; Mr. Tracy Overcash. Signed by Mr. Glenn Peterson and Mr. Tracy Overcash.
January 11, 2019	Comments received from supervisor.
INSERT DATE	Public notice and concurrent EPA review began.
INSERT DATE	Public notice and concurrent EPA review over.
INSERT DATE	Permit issued.

IV. Permit Modification/Changes

Table of changes to permit 07334T27.

Page(s)	Section	Description of Change(s)
Cover letter	NA	Update permit revision number and issue date, revise insignificant activity list.
Permit cover	NA	Update permit revision number, issue date, application number.

Page(s)	Section	Description of Change(s)
3	Section 1	Modified table to reflect revised source description (ES-1). Removed ES-2. Added new source ES-Etch and control 4WS, etc.
5	Section 2.1 A	Revised source description for ES-1. Removed ES-2. Remove MACT avoidance and corrected CAM in the table.
6	Section 2.1 A.1.a	Revised source description for ES-1. Remove and replace testing requirement.
7	Section 2.1 A.1.a Section 2.1 A.1.b	Remove block valve requirements and ES-2.
8	Section 2.1 A.2.a	Require re-establishing normal as new CVD lathes are added for 02D .0521.
9	Section 2.1 A.2.b Section 2.1 B	Remove ES-2. Revise description and remove ES-2.
10-12	Section 2.1 C. Section 2.2 A.	Add Etching Operations (ES-Etch). Remove MACT Avoidance condition.
13	Section 2.2 B	Remove ES-2.
14	Section 2.2 B.1.i	Remove ES-2.
15	Section 2.2 C.	Remove ES-2.
17	Section 2.2 C.1.h	Remove ES-2.
18-20	Section 2.2 D Section 2.2 D.1 Section 2.2 D.1.c	Revise description. Add Etching Operations (ES-Etch). Remove previous table and insert new table based on toxics modeling. Remove stack testing requirement.
21-25	Section 2.3 A.1 Section 2.3 A.2 Section 2.3 A.3	Remove CAM stipulations. Remove HF as a CAM pollutant. Remove HF as a CAM pollutant.
26-35	Section 3	Insert latest version of General Conditions - version 5.3, 08/21/2018.

V. Regulatory Review

The facility is subject to the following regulations:
15A NCAC 02D .0515, Particulates from Miscellaneous Industrial Processes
15A NCAC 02D .0516, Sulfur Dioxide Emissions from Combustion Sources
15A NCAC 02D .0521, Control of Visible Emissions
15A NCAC 02D .0524, New Source Performance Standards (Subpart IIII)
15A NCAC 02D .0614, Compliance Assurance Monitoring (CAM)
15A NCAC 02D .1100, Control of Toxic Air Pollutants *(State-Enforceable Only)*
15A NCAC 02D .1111, Maximum Available Control Technology (Subpart ZZZZ)
15A NCAC 02D .1806, Control of Odorous Emissions *(State-Enforceable Only)*
15A NCAC 02Q .0317, Avoidance Conditions for Limitation to Avoid 15A NCAC 2D. 0530: Prevention of Significant Deterioration (for NOx)

The facility was subject to the following regulation that has been removed:
15A NCAC 02Q .0317, Avoidance Conditions for Limitation to Avoid Being Major for Hazardous Air Pollutants

Reorganization of Sources and Controls in Permit Condition 2.1.A. with Proposed Changes in this Application

The following changes that are two-fold, reorganizing and clarifying the descriptions and addressing other changes proposed in this application. The CVD lathes proposed in this application are added to the description. The CVD Process Hoods (ES-2) are removed. The SiCl4 Bulk Storage Room controlled by wet scrubber (3WS) was combined with all sources controlled by scrubber (3WS). Changes to the permit are indicated by highlighting and strikethrough:

A. Chemical Vapor Deposition Units (ID No. ES-1) consisting of:
Cells 5, 6, and 7 with CVD lathes with Gas cabinets (ID No. ES-4-3WS), Collapse Furnaces (ID No. ES-14), Chemical Room (ID No. ES-11) and SiCl4 Bulk Storage Room (ID No. ES-18) venting to Wet Scrubber (ID No. 3WS)
Over-cladding Units (ID No. ES-9) consisting of:
Cells 4, and four Cell 5 units venting to Hydrated Lime Injection Dry Scrubber Fabric Filter System (ID No. 1DS), venting to Selective Catalytic NOx Reduction System (ID No. 1SCR)
Over-cladding Units (ID No. ES-9a) consisting of:
Cells 6, 7, and remaining Cell 5 units venting to Hydrated Lime Injection Dry Scrubber Fabric Filter System (ID No. 2DS), venting to Selective Catalytic NOx Reduction System (ID No. 2SCR)

The following table provides a summary of limits and standards for the emission source(s) described above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate Matter	For process rates less than 30 tons per hour: $E = 4.10\ P^{0.67}$ Where, E is the allowable emission rate in pounds per hour, and P is the process weight rate in tons per hour	15A NCAC 02D .0515
Visible Emissions	20 percent opacity	15A NCAC 02D .0521
See Review Note 1. Hazardous Air Pollutants	See Section 2.2 A. Multiple Emissions Sources in the Permit	15A NCAC 02Q .0317 **MACT Avoidance Condition**
See Review Note 2. Particulate Matter	**Affected Sources – ES-9, and ES-9a** Compliance Assurance Monitoring (CAM) See Sections 2.3 A. and B in the Permit	15A NCAC 02D .0614
Nitrogen Oxides	**Affected Sources - Cell 5, 6, 7, Equipment** See Section 2.2 B. Multiple Emissions Sources	15A NCAC 02Q .0317 (15A NCAC 02D .0530) **PSD Avoidance Condition**
See Review Note 2. Toxic Air Pollutants	State-enforceable only Cl_2, HCl, HF, NH_3 See Section 2.2 C. Multiple Emissions Sources	15A NCAC 02D .1100

Review Notes:

1. **The existing condition (Section 2.2 A) was removed from the permit. See discussion in Section I, above**
2. **These CAM conditions (currently, Sections 2.3 A and B in the permit) were modified. See discussion in Section I, above. The state only toxic air pollutants conditions (Section 2.2 C) were modified.**

1. 15A NCAC 02D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

Emissions of particulate matter from **(ID No. ES-1)** shall not exceed an allowable emission rate as calculated by the following equation:

$$E = 4.10 \times P^{0.67}$$

Where; E = allowable emission rate in pounds per hour, and
P = process weight in tons per hour

Liquid and gaseous fuels and combustion air are not considered as part of the process weight.

a. Chemical Vapor Deposition Units (ID No. ES-1) with CVD lathes and SiCl4 Bulk Storage Room (ID No. ES-18)

Testing was required for PM (and HCl, HF, Cl and NOx). The stack test was performed on **February 14, 2017**. The test results were found acceptable by the SSCB. Emissions of PM were found to be **0.028 lb/hr**. The allowable was **0.72 lb/hr** (based on Air-Tech monitoring of throughput). Therefore, compliance was indicated. In addition, compliance with the monitoring parameters was indicated. **This test was based on two CVD lathes.** The stack test observation report and observation report notes; "compliance should be based on how many units can be operated at one time to determine potential hourly emissions. The facility kept track of the number of units operating during the test and should remain confidential."

In **February 2014** Prysmian requested additional CVD lathes. With this application Prysmian requests to add additional CVD lathes. For the purposes of demonstrating compliance with 02D .0515 the new process rate weight is **0.04 tons/hr** and allowable emissions are **0.44 lb/hr** for the CVD lathes. The applicant estimated PM to be **0.42 lb/hr** from all the sources with CVD lathes[1]. This is below the emissions standard; continued compliance is expected.

The permit application for a significant modification requested the specific condition 2.1.1.a.v and viii concerning the "block valve" be removed; the block valve was used to prevent the scrubber from being overloaded. This is no longer an issue with the current operations.

Changes were made in Condition 2.1 A.1.a of the permit. The testing requirements was changed to the standard language because the testing was completed.

Testing [15A NCAC 02Q .0508(f)]

i. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 A. 1. above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515.

Monitoring [15A NCAC 02Q .0508(f)]

ii. Particulate matter emissions from the chemical vapor deposition units **(ID No. ES-1)** shall be controlled by the wet scrubber system **(ID No. 3WS)**. To comply with the provisions of this Permit and ensure that optimum control efficiency is maintained, the Permittee shall establish an inspection and maintenance schedule/checklist based on manufacturer's recommendations. Additionally, a quarterly internal inspection shall be conducted on the wet scrubbers by the Permittee to insure structural integrity such that optimum control efficiency is achieved. As a minimum, the inspection and maintenance program shall include inspection of spray nozzles, packing material, chemical feed system, and the cleaning/calibration of all associated instrumentation.

iii. The Permittee shall ensure the proper performance of the scrubber by monitoring the following operational parameters each shift:

ID No. 3WS

(A) Recycle liquid flow rates (greater than 90 gallons per minute),
(B) Liquid make-up flow rates (greater than 1gallon per minute),
(C) pH of recirculation tank scrubbing solution (pH 8 or higher as determined from source testing), and
(D) Pressure drop across the scrubber (10 to 15 inches of water).

iv. The Permittee shall be deemed in non-compliance with 02D .0515 if records of the monitoring results are not maintained.

[1] This PM emissions projection was based on the stack test**; 0.028 lb/hr / 2 CVD** lathes multiplied times the proposed CVD lathes = **0.42 lb/hr**. The process weight rate was **0.04 TPY** and the 02D .0515 emissions limit was **0.44 lb/hr**. See email of August 30, 2018 from D. Norvell of Trinity providing a revised process rate.

Recordkeeping [15A NCAC 02Q .0508(f)]

v. The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following each shift:
   (A) The date and time of each recorded action,
   (B) The results of each inspection,
   (C) The results of any maintenance performed on the scrubber system,
   (D) Any variance from manufacturer's recommendations, if any, and corrections made,
   (E) The recycle liquid flow rates,
   (F) Liquid make-up flow rates,
   (G) pH of the scrubber solutions, and
   (H) The pressure drop across the scrubber.

iv. The Permittee shall be deemed in non-compliance with 02D .0515 if records of the monitoring results are not maintained

Reporting [15A NCAC 02Q .0508(f)]

vi. The Permittee shall submit the results of any inspection, maintenance, or monitoring performed for each control device within 30 days of a written request by the DAQ.

vii. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

Continued compliance is expected.

The CVD deposition process hoods (ES-2) associated with 3WS and permit condition were removed from the permit since they are no longer in operation.

The Over-cladding Units (ES-9 and ES-9a) are controlled by the lime injection/fabric filter system (1DS and 2DS). This section of the permit did not require any modifications except for the following.

Continued compliance is expected.

b. Over-cladding Units (ID Nos. ES-9 and ES-9a)

2. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

Visible emissions from this source group~~s~~ shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity. [15A NCAC 02D .0521 (d)]

a. Chemical Vapor Deposition Units (ID No. ES-1) with CVD lathes and Over-cladding Units (ID No. ES-9 & ES 9a)

The Permittee is required to observe the emission point weekly. This application is for additional CVD lathes. The emission point shall be observed within 30 days of the addition of each new CVD lathe to reestablish normal. No other changes to the permit condition were required.

Continued compliance is expected.

ii. The Permittee shall observe the emissions points to reestablish normal within 30 days of the operation of each additional CVD lathe.

The CVD deposition process hoods (ES-2) associated with 3WS and permit condition were removed since they are no longer in operation.

B. Over-cladding Units (ID No. ES-9) consisting of:
Cells 4, and some cell 5 units venting to Hydrated Lime Injection Dry Scrubber Fabric Filter System (ID No. 1DS), which vents to Selective Catalytic NOx Reduction System (ID No. 1SCR)
Over-cladding Units (ID No. ES-9a) consisting of:
Cells 6, 7, and remaining cell 5 units venting to Hydrated Lime Injection Dry Scrubber Fabric Filter System (ID No. 2DS), which vents to Selective Catalytic NOx Reduction System (ID No. 2SCR)

The following section was added to the permit for this new emissions source and control device as indicated by highlighting. This is a source of HAPs and TAPs only with no particulate according to the application.

C. Etching Operations (ID No. ES-Etch) venting to a Wet Scrubber (ID No. 4WS)

The following table provides a summary of limits and standards for the emission source(s) described above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
See Review Note 1 Toxic Air Pollutants	Cl_2, HCl, HF, NH_3 See Section 2.2 C. Multiple Emissions Sources	15A NCAC 02D .1100

Review Note:
1. The state only toxic air pollutants conditions (Section 2.2 C) were modified.

Reorganization of Sources and Controls in Permit Condition 2.1.B with Proposed Changes in this Application

This engineer proposes the following changes for clarifying the description and for the removal of ES-2.

B. Over-cladding Units (ID No. ES-9) consisting of:
Cells 4, and four Cell 5 units venting to Hydrated Lime Injection Dry Scrubber Fabric Filter System (ID No. 1DS), to Selective Catalytic NOx Reduction System (ID No. 1SCR)
Over-cladding Units (ID No. ES-9a) consisting of:
Cells 6, 7, and remaining Cell 5 units venting to Hydrated Lime Injection Dry Scrubber Fabric Filter System (ID No. 2DS), venting to Selective Catalytic NOx Reduction System (ID No. 2SCR)

Addition of New Sources and Controls in Permit Condition 2.1.C.

Regulatory Review – The Etching Operations (ES-Etch), a source of HAPs and TAPs, will not be subject to MACT avoidance as this condition has been removed from the permit. The before control emissions potential emissions of HF are projected to be 2.12 TPY. The application indicates this is not a source of particulate thus 02D .0515 and .0521 do not apply. Since no SIP rule applies the control device 4WS is not subject to CAM. The state enforceable air toxics regulation does apply and is discussed later in this report.

C. Etching Operations (ID No. ES-Etch) venting to a Wet Scrubber (ID No. 4WS)

The following table provides a summary of limits and standards for the emission source(s) described above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
See Review Note 1 Toxic Air Pollutants	Cl_2, HCl, HF, NH_3 See Section 2.2 C. Multiple Emissions Sources	15A NCAC 02D .1100

Review Note:

1. The state only toxic air pollutants conditions (Section 2.2 C) were modified.

The MACT Avoidance Condition in Section 2.2 - Multiple Emission Source(s) Specific Limitations and Conditions was removed from the Permit.

Application 1800419.18B Removal of HAP Avoidance Limit

As discussed in Section I - Purpose of Application (above), Prysmian has an enforceable facility-wide emissions limit in the current permit to remain a minor source of hazardous air pollutants (HAPs). Along with the other proposed changes described above, Prysmian requested the addition of more CVD lathes. Prysmian was managing the operation of these lathes to remain a minor source of HAP. Under this application, Prysmian requested the removal of this condition and become a major source of HAPs. Prysmian will become a major source as a result of operating the CVD lathes and the new Etching operations with no restrictions on HAP emissions. There does not appear to be an applicable 112(d) MACT that applies.

The CVD deposition process hoods (ES-2) associated with 3WS were removed since it is no longer in operation.

This engineer concurs with the removal of the HAP avoidance conditions and limitations.

A. Over-cladding Units (ID No. ES-9, excluding cell 5 units). Two 8.76 million Btu per hour heat input natural gas-fired boilers (insignificant sources) Insignificant Sources (0.75 million Btu per hour hot water boilers, sludge dryer, emergency fire pump, emergency generator, parts washer, two 0.129 million Btu per hour boilers and air handling units)

The following provides a summary of limits and/or standards for the emission sources described above.

Regulated Pollutant	Limits/Standards	Applicable Regulation
Nitrogen Oxides	Total emissions of nitrogen oxides shall be less than 250 tons per consecutive 12-month period.	15A NCAC 02Q .0317 **PSD Avoidance**

1. 15A NCAC 02Q .0317: AVOIDANCE CONDITIONS for 15A NCAC 02D. 0530: PREVENTION OF SIGNIFICANT DETERIORATION

The nitrogen oxides emissions due to equipment operation shall be less than 250 tons per consecutive 12-month period. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if NOx emissions exceed this limit.

The CVD deposition process hoods (ES-2) associated with 3WS were removed since it is no longer in operation. No other changes were required. Annual testing for uncontrolled NOx emissions, the control efficiency of the lime injection system and prior to and after the SCR control (currently not in operation) are required and remain.

Continued compliance is expected.

C. Cells 5, 6, and 7 Equipment consisting of:
Over-cladding Units (ID No. ES-9a and cell 5 units in ES-9).
Two 8.0 million Btu per hour heat input natural gas-fired boilers;
Two 10.0 million Btu per hour SCR flue gas re-heaters; and,
Two 1.0 million Btu per hour SCR ammonia injector dilution air heaters.

The following provides a summary of limits and/or standards for the emission sources described above.

Regulated Pollutant	Limits/Standards	Applicable Regulation
Nitrogen Oxides	Total emissions of nitrogen oxides shall be less than 250 tons per consecutive 12-month period.	15A NCAC 02Q .0317 **PSD Avoidance**

1. 15A NCAC 02Q .0317: AVOIDANCE CONDITIONS for 15A NCAC 02D. 0530: PREVENTION OF SIGNIFICANT DETERIORATION

The nitrogen oxides emissions due to equipment operation shall be less than 250 tons per consecutive 12-month period. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if NOx emissions exceed this limit.

The only change throughout this existing condition was for the removal of ES-2 and associated stipulations. No other changes were required. Annual testing for uncontrolled NOx emissions, the control efficiency of the lime injection system and prior to and after the SCR control (currently not in operation) are required and remain.

Continued compliance is expected.

Addition of New Sources and Controls in Section 2.2 and Changes to State Air Toxics Condition

C. Chemical Vapor Deposition Units (ID No. ES-1)
Gas Cabinets (ID No. ES-4), and Collapse Furnaces (ID No. ES-14) consisting of:
Cells 5, 6, and 7 with Wet Scrubber (ID No. 3WS); and,
Over-cladding Units (ID No. ES-9) consisting of:
Cells 4, and some cell 5 units venting to Hydrated Lime Injection Dry Scrubber Fabric Filter System (ID No. 1DS) that vents to a Selective Catalytic NOx Reduction System (ID No. 1SCR).
Over-cladding Units (ID No. ES-9a) consisting of:
Cells 6, 7, and remaining cell 5 units venting to Hydrated Lime Injection Dry Scrubber Fabric Filter System (ID No. 2DS) that vents to a Selective Catalytic NOx Reduction System (ID No. 2SCR); and,
Chemical Room (ID No. ES-11) with Wet Scrubber System (ID No. 3WS); and,
SiCl4 Storage Room (ID No. 18) with Wet Scrubber System (ID No. 3WS).

Etching Operations (ID No. ES-Etch) equipped with Wet Scrubber System (ID No. 4WS)

The following provides a summary of limits and/or standards for the emission sources described above.

Regulated Pollutant	Limits/Standards	Applicable Regulation
Toxic Air Pollutants	**STATE-ONLY REQUIREMENT** Emissions of HCl, Cl_2, HF, and NH_3 must be emitted at or below the emission rates tabulated in the next table in order to comply with the following acceptable ambient levels. HCl: 0.7 milligrams/cubic meter - 1hr Cl_2: 0.9 milligrams/ cubic meter - 1 hr and 0.0375 milligrams /cubic meter - 24 hr HF: 0.25 milligrams/cubic meter - 1hr 0.03 milligrams/cubic meter - 24 hr NH_3: 2.7 milligrams/cubic meter - 1hr	15A NCAC 02D .1100

A toxic air pollutant (TAP) permit application shall include an evaluation of the TAP emissions from facility sources, excluding exempt sources listed under 15A NCAC 02Q .0702(a)(18). This regulation outlines the procedures that must be followed if modeling is required under 15A NCAC 02Q .0700. The facility previously triggered and modeled the following four (4) TAPs: hydrogen chloride (HCl), chlorine (Cl2), hydrogen fluoride (HF) and ammonia (NH3).

The new etching operations will emit the TAP, hydrogen fluoride. Since the etching operations are a new emission source of HF and HF modeling has previously been triggered and required for the site, Prysmian performed updated HF modeling as outlined in Section 4.0. HF was modeled using a worst-case stack approach and therefore one facility wide number is replacing current stack by stack HF limits.

Prysmian is requesting an increase of the number of CVD lathes. The CVD lathes are all vented to the existing wet scrubber (3WS). The chlorine, HCl and HF emissions from the proposed lathes are less than the current toxic limits in the permit for sources venting through 3WS. For this reason, no modeling has been conducted for chlorine and HCl. The dispersion modeling analysis was approved by Mr. Mathew Porter on **April 10, 2018**. As noted in the analysis proposed emissions limits were based on impacts optimized to 99% of the AAL. The revised emissions limits and control requirements follow as indicated by strikethrough and highlighting:

STATE-ONLY REQUIREMENT

1. 02D .1100 "CONTROL OF TOXIC AIR POLLUTANTS"

Emission Limits and Control Requirements

Affected Sources	Pollutant	Emission Limit
EP-11: Wet Scrubber #1 **(ID No. 3WS)** Envirocare #1 Includes emission from: Cells 5, 6, and 7 CVD **(ID Nos. ES-1)** CVD lathes	Hydrogen Chloride	9.063 lb/hr
	Chlorine	5.582 lb/hr; and, 133.97 lb/day

Cells 5, 6, and 7 GC **(ID No. ES-4)**, Cells 5, 6 and 7 CF **(ID No. ES-14)** Chemical Room **(ID No. ES-11)** $SiCl_4$ Storage Room **(ID No. ES-18)**		
EP-21 combined stack for SCRs	Ammonia	1.584 lb/hr per SCR
EP-11: Wet Scrubber #1 **(ID No. 3WS)** Envirocare #1 Includes emission from: Cells 5, 6, and 7 CVD **(ID Nos. ES-1)** Cells 5, 6, and 7 GC **(ID No. ES-4)**, Cells 5, 6 and 7 CF **(ID No. ES-14)** Chemical Room **(ID No. ES-11)** $SiCl_4$ Storage Room **(ID No. ES-18)** EP-18: dry scrubber **(ID No. 1DS)** or EP-21: SCR **(ID No. 1SCR)** Cells 4, and some cell 5 OC units **(ID No. ES-9** EP-19: dry scrubber #1 **(ID No. 2DS)** or EP-21: SCR **(ID No. 2SCR)** Cells 6, 7, and remaining cell 5 OC units **(ID No. ES-9a)** EP-4WS: Wet Scrubber **(ID No. 4WS)** Includes emission from: Etching operations **(ID No. ES-Etch)**	Hydrogen Fluoride	2.67 lb/hr; and, 41.03 lb/day

a. Emissions from the CVD processes will be controlled by the scrubber **(ID No. 3WS).**
b. Emissions from the Over-cladding Units **(ID Nos. ES-9 and ES-9a)** shall be controlled by two fabric filters each with hydrated lime injection **(ID Nos. 1DS and 2DS)**.
c. Emissions from the Etch processes will be controlled by the scrubber **(ID No. 4WS).**

c. **General**
Emissions testing is required. The testing shall be performed in accordance with General Condition JJ.

Monitoring, Recordkeeping and Reporting [15A NCAC 02Q .0508(f)]

d. Monitoring, recordkeeping, and reporting pertain to inspection and maintenance of control devices and parametric monitoring to ensure control efficiencies. These are addressed above in 2.1 A.1.a.ii-vii. and 2.1 A.1.b.ii-vi.
e. Continuous emission analyzers for ammonia emissions from the selective catalytic NOx reduction systems **(ID Nos. 1SCR and 2SCR)** shall be inspected and maintained in accordance with the manufacturer's recommendations. As a minimum, the instruments shall be calibrated daily. Records of calibrations, inspections, and maintenance shall be kept in a logbook and maintained on site. Records shall be made available to the DAQ personnel upon request. All required records on file for a minimum of two years.

Changes to CAM in Section 2.3 - Compliance Assurance Monitoring (CAM; 40 CFR Part 64)

The CAM conditions were modified. See above discussion in Section I.

A. One Fabric Filter with Hydrated Lime Injection (ID No. 1DS)

1. 15A NCAC 02D .0614: Continuous Assurance Monitoring for fabric filter with hydrated lime injection (ID No. 1DS)

a. The Permittee shall ensure that PM emitted from the Over-cladding Units (**ID No. ES-9)** is controlled by a fabric filter **(ID No. 1DS)** by monitoring the following operating parameters:
   i. Pressure drop across the fabric filter, and
   ii. Lime injection rate.

B. One Fabric Filter With Hydrated Lime Injection (ID No. 2DS)

1. 15A NCAC 02D .0614: Continuous Assurance Monitoring for fabric filter with hydrated lime injection (ID No. 2DS)

a. The Permittee shall ensure that PM emitted from the Over-cladding Units (**ID No. ES-9a)** is controlled by a fabric filter **(ID No. 2DS)** by monitoring the following operating parameters:
   i Pressure drop across the fabric filter, and
   ii. Lime injection rate.

VI. NSPS, NESHAPS/MACT, PSD/Increment, Attainment Status, 112(r), CAM, PE Requirement

NSPS

The facility is currently is subject to New Source Performance Standards (NSPS) Subpart IIII for the emergency generators.

NESHAP/MACT

This facility has an existing fire pump and emergency generator subject to a MACT Subpart ZZZZ that were subject to the area source provisions. The facility-wide limitation of 10 TPY for any individual HAP and a 25 TPY limit for total HAP emissions to avoid being a major source of HAP emissions was removed therefore the facility is considered a major HAP source. As such the existing sources above, the two new emergency generators and the existing boilers in the insignificant activities list will be subject to the major source provisions of both MACT Subpart ZZZZ and DDDDD. As per the latest SOP these sources are included on the insignificant activities list.

PSD/Increment

This facility is an existing major source of NOx (i.e., PTE greater than 250 TPY). The facility is currently operating under two PSD avoidance conditions for NOx.

The two NOx existing avoidance conditions, as per 2.2 B and 2.2 C, includes an annual stack testing conditions. Testing will establish emissions factors for calculations. These stipulations allow for operating dry scrubber systems or the SCRs.

The proposed modifications in this application results in an insignificant increase of PM10. The major source modification significant emission rate for PM10 is 15 TPY per year. The projected increase would be, from the application:

(4.21 lb/hr - *after the modification*) – (3.96 lb/hr - *before modification*) = 0.25 pounds per hour.

The PSD minor source baseline date is triggered for Catawba County for the emissions of PM10. Since emissions increases of PM10 are 0.25 pound per hour

The proposed modifications in this application will result in an increase in HF. HF is not considered a Fluoride (with a SER of 4 tpy).

Attainment Status
This facility is located in Catawba County, this county is not designated as in non-attainment for the 2008 eight-hour ozone standard.

112(r)
This facility is not subject to Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above the thresholds in the Rule.

CAM
After this modification CAM applies to emission sources ES-9, and ES-9a and control devices 1DS, and 2DS for PM only. See above discussion in Section I.

PE Requirements
Emissions from the sources additional CVD lathes ES-1 are to be controlled by existing scrubber 3WS. Also, the new source ES-Etch will be controlled by a new scrubber 4WS. In conformance with 15A NCAC 02Q .0112 a PE seal was provided.

VII. Facility-wide Air Toxics

Emissions were projected based on stack testing of the source ES-1 with existing control device 3WS and the addition of 20 CVD lathes. Testing of two lathes indicated emissions factors increased in some cases. Even so compliance was demonstrated with the existing permit. See memorandum of **November 28, 2017** from SSCB. In addition, a new source ES-Etch with new control device 4WS was added to the permit. As such, air toxics modeling was required. See memorandum of **April 10, 2018** from Matt Mathews of AQAB approving the demonstration. The existing 02D .1100 condition was modified.

VIII. Statement of Compliance

The DAQ has reviewed the compliance status of this facility. Based on visual observations and review of records at the time of the inspection by the region on **December 1, 2017**, this facility appeared to be operating in compliance with Air Quality standards and regulations.

IX. Stipulation Review

The permit modification/changes (where needed) were incorporated into the permit (see table of changes in Section IV of this document).

X. Public Notice / EPA and Affected State Review

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant shall

be provided to EPA. Also, pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice is provided to the public under 02Q .0521 above. South Carolina and Mecklenburg County-local program are an affected state and a local program within 50 miles of the facility.

XI. Conclusions, Comments, and Recommendations

1. A professional engineer's seal was required and provided.

2. A zoning consistency determination was required and provided for this combined minor and significant modification.

3. MRO recommends issuance of the permit and required a DRAFT permit prior to issuance.

4. RCO concurs with MRO's recommendation to issue air permit.

5. Comments and responses received from MRO, supervisor and applicant on the draft permit and review were addressed.

6. Recommend issuance of Air Permit 07334T28.